

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20054**

CONNECT AMERICA FUND:)	
PERFORMANCE MEASURES FOR)	DOCKET NO. 10-90
CONNECT AMERICA HIGH-COST)	DA 17-1085
UNIVERSAL SERVICE SUPPORT)	
RECIPIENTS)	

**COMMENTS OF
NTCA–THE RURAL BROADBAND ASSOCIATION**

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To the Commission:

I. INTRODUCTION.

NTCA–The Rural Broadband Association (NTCA)¹ hereby files these comments in the above-captioned proceeding. The Commission is engaged to update the record on performance measurement obligations for recipients of high-cost support.² In these comments, NTCA urges the Commission to (a) ensure that any testing protocol as may be imposed is technology-neutral, (b) capture sufficient data to discern the actual capabilities of the supported network, and (c) recognize and make reasonable accommodations for the potential burden on smaller eligible telecommunications carriers (ETCs) that would be occasioned by performance testing

¹ NTCA represents nearly 850 independent, community-based telecommunications companies and cooperatives and more than 400 other firms that support or are themselves engaged in the provision of communications services in the most rural portions of America. All NTCA’s service provider members are full service rural local exchange carriers (RLECs) and broadband providers.

² "Comment Sought on Performance Measures for Connect America High-Cost Universal Service Support Recipients," Public Notice DA 17-1085, Docket No. 10-90 (Nov. 6, 2017) (PN or 2017 PN).

obligations. Data gathered in accordance with these three principles will balance the dual needs of acquiring an accurate understanding of ETC compliance while not consuming unnecessarily resources that are better left to improving the availability and affordability of supported services in rural markets.

In significant measure, the PN seeks comment on a proposal of USTelecom (filed in May 2017) that would expand the time, manner, and reporting of testing, ostensibly creating a more comprehensive set of options by which carriers can complete this task and demonstrate compliance.³ The USTelecom *ex parte* filing was intended to "meet the framework" of a 2014 Commission effort aimed at developing standards for all high-cost support recipients.⁴ In 2014, the Commission sought comment on whether "the same testing methodologies adopted for price cap carriers accepting model-based Phase II support should be applied to other recipients of support to serve fixed locations, such as rate-of-return providers and those that are awarded Connect America support through a competitive bidding process."⁵ In its May 2017 *ex parte* filing, USTelecom proposed that its recommendations "apply to CAF Phase II (CAF II) recipients . . . and, with some minor modifications, to rate of return carriers" ⁶ The Commission now seeks to refresh the record, including specific comment on the USTelecom

³ *Notice of Ex Parte of USTelecom: Connect America Fund*, Docket No. 10-90 (May 23, 2017).

⁴ See, "Wireline Competition Bureau, Wireless Telecommunications Bureau, and the Office of Engineering and Technology Seek Comment on Proposed Methodology for Connect America High-Cost Universal Service Support Recipients to Measure and Report Speed and Latency Performance to Fixed Locations," Public Notice, Docket No. 10-90, DA 14-1499 (Oct. 16, 2014) (2014 PN).

⁵ *Id.*, at 1 (internal citation omitted).

⁶ *Ex Parte of USTelecom*, at n.2.

proposal. As described more fully herein and below, NTCA supports: (1) the use of customer premise equipment (CPE) for testing; (2) testing group sizes that are keyed to the size of the provider; (3) testing of only those network segments that are, in fact, part of the supported network and within the control of the ETC; and, (4) reasonably expanded testing windows that provide flexibility but still recognize the implications of peak performance characteristics (*e.g.*, busy hour offered load (BHOL)) and thereby prevent "false positive" reporting as to network capability.

II. DISCUSSION.

A. ACTUAL CONSUMER EXPERIENCE MUST DRIVE THE DESIGN OF PERFORMANCE TESTING REQUIREMENTS, BUT THE COSTS OF CONDUCTING TESTING MUST BE ACCOUNTED FOR, AS WELL.

NTCA supports the Commission's effort to ensure that high-cost support results in deployment and operation of networks from which customers can obtain services that are reasonably comparable in both price and quality to those enjoyed by users in urban areas.⁷ This is consistent with the Universal Service mandate of the Communications Act of 1934, as amended by the Telecommunications Act of 1996 (the Act).⁸ Challengingly, however,

⁷ NTCA takes this opportunity to note that the troubling discrepancy between the Commission's general definition of broadband (25/3) (*see, Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act 1996, as Amended by the Broadband Data Improvement Act: 2015 Broadband Progress Report and Notice of Inquiry on Immediate Action to Accelerate Deployment*, Docket No. 14-126, FCC 15-10, at paras. 3, 26) (2015)) and the minimum standard set for subscribers of high-cost support companies (10/1) (*see, Connect America Fund; ETC Annual Reports and Certifications; Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160 from Obsolete ILEC Regulatory Obligations that Inhibit Deployment of Next Generation Networks: Report and Order*, Docket Nos. 10-90, 14-58, 14-192, FCC 14-190, at para. 15 (2014)).

⁸ 47 U.S.C. § 254(b).

performance testing creates costs. And, these costs loom at a time when constraints in the same high-cost budget that supports the networks to be tested limit the capabilities of network operators.⁹ In these comments, NTCA proposes an approach that recognizes these competing interests.

Additionally, NTCA submits that testing protocols must not mask disparate capabilities of various technologies. Rather, given the statutory goal of “reasonable comparability” for the rural consumer, the Commission must ensure that any measures as may be imposed reveal accurately whether, in fact, subscribers are obtaining the delineated supported capabilities *without regard to or compromise based upon* the underlying network facilities. Inasmuch as high-cost support is intended by statute to enable rural users to obtain services that are reasonably comparable to those that are available in urban areas, performance testing endeavors to confirm whether, in fact, subscribers are receiving that defined level of service *without regard* to the underlying technology by which it is provided. Accordingly, while the Commission can

⁹ For example, as described in previously filings before the Commission, RLECs that continue to receive support based upon the actual costs of rural investments and operations are subject to more and more crippling budget constraints. In addition to the primarily insufficient budget imposed in 2011, and into which CAF-ICC replacement revenues were included, many RLECs are suffering further large and unpredictable reductions in High Cost Loop Support (HCLS) and Connect America Fund – Broadband Loop Service (CAF-BLS) support due to the budget control mechanisms of Sections 54.901(f) and 54.1310(d). “Actual cost” carriers are experiencing rapidly increasing budget control mechanism “haircuts” (currently 12.35 percent for CAF-BLS support for the 2017-2018 period, and 14.9 percent for HCLS for the Fourth Quarter 2017) that are slashing their USF support to levels that are below those that were insufficient even six and seven years ago when most rural households were content with dial-up or very low-speed broadband services. If current trajectories are any indication, these budget control mechanism “haircuts” could reach the 19-to-20 percent level during 2018. *See, Connect America Fund; Establishing Just and Reasonable Rates for Local Exchange Carriers; Developing a Unified Intercarrier Compensation Regime: Joint Reply Comments of NTCA–The Rural Broadband Association and WTA - Advocates for Rural Broadband*, Docket Nos. 10-90, 07-135, 01-92 (filed Oct. 20, 2017).

incorporate tailored recognition of carrier *size* in regulations it adopts, those regulations should be *technology* neutral. The burden of testing obligations may be visited disproportionately on a small provider, no matter the technology it employs. But, neither testing standards nor protocols should leave opportunity for the results of less-capable services to masquerade as statutorily compliant.

As described more fully below, testing costs arise out of the numerous steps involved in performance measurement. These include, but are not limited to: identification of test locations; obtaining authorization of customers; purchase, deployment, and activation of testing equipment; gathering the data; and organizing it for submission to the governing authority. Moreover, on an on-going basis, providers must inspect, maintain, and verify the accuracy of the testing equipment. Accordingly, NTCA urges the Commission to ensure that performance measurement requirements do not impose a disproportionate or overly burdensome obligation on small providers.

B. PERFORMANCE MEASUREMENTS MUST ACCOUNT FOR THE UNIQUE CONDITIONS OF SMALL PROVIDERS.

1. Use of Customer Premise Equipment

(a) Testing should occur at an active subscriber location

At the outset, NTCA supports the USTelecom proposal that testing be limited to locations with an actual subscriber.¹⁰ Permitting testing results to be detached from an actual subscriber location fails the mission of assuring that high-cost support is enabling access to reasonably comparable services for users. In the absence of an "actual subscriber" requirement, a provider

¹⁰ 2017 PN at para 8.

could identify a location in its service area where service is most consistently strong, and extract its compliance results from testing at that location, rather than the residence, business, or other location at which subscribers actually use the service on a regular basis. Although the likelihood of this occurring for a fixed wireline provider is remote, the rules must ensure that the performance of wireless service is measured at the subscriber location, rather than an arbitrary point in the service area where signal reception is strongest.¹¹

(b) The costs of performance measurement can be substantial

Recipients of Phase II model-based support are required to demonstrate consistent ability to provide service that is consistent with Commission standards.¹² Carriers participating in the Measuring Broadband America (MBA) program may use the results from that testing if they deploy at least 50 Whiteboxes to customers within the Phase II-funded areas. This approach, specifically, to rely upon customer premises equipment (CPE), may be preferable for many operators over testing that relies upon implementing additional functionalities into the network; the latter would require small providers to reconfigure network facilities and software whose impact would ultimately touch only a handful of customers. However, even the CPE approach (as compared against a network-based approach) implicates costs that must be noted and

¹¹ See, e.g., "Broadband Availability Gap: OBI Technical Paper No. 1," Federal Communications Commission, Washington, at 69, Ex. 4-M (2010) (available at <https://transition.fcc.gov/national-broadband-plan/broadband-availability-gap-paper.pdf> (last view Nov. 28, 2017, 12:28) (illustrating propagation loss for different types of terrain at 700 MHz).

¹² Specifically, this contemplates round-trip latency of 100 milliseconds (ms) 95 percent or more of the time during peak usage periods between the customer premises and the nearest designated Internet core peering interconnection point (IXP). Price cap carriers that accept Phase II model-based support are required for a minimum of two consecutive weeks for at least 50 randomly-selected customer locations.

considered. In the first instance, ETCs will be required to obtain the CPE. Beyond those hardware costs, ETCs would be required to obtain the consent of the customers at whose location the equipment will be installed. In this regard, the provider would need to identify potential subjects. A prerequisite to that identification is filtering for customers that are subscribing to at least the speeds that are being tested; this is necessary to avoid "false negatives," or results that indicate non-compliance *only* because the subscriber does not order the measured service. After identifying a potential population of testing subjects, the provider must then obtain the consent of each subject. After the customer's consent is obtained, the provider would then either need to ship or personally deliver the device to the user; the provider might also need to order a "truck roll" to the premise to connect the CPE. In rural areas, these service calls can be particularly costly. Even where an initial truck roll was not ordered, the likelihood of subsequent "trouble shooting" calls must be considered. And, for rural providers, these costs can be substantial where many miles might lie between customers; one NTCA member noted potential round-trip service calls of 200 miles.

The impact of customer attrition must also be considered: customers are likely inclined to work patiently with tech support to ensure that equipment that serves their needs (*i.e.*, a modem or router) is connected and working properly. However, it is possible that customers might not act with similar alacrity to connect testing equipment once it arrives, or to aggressively pursue resolution of technical malfunctions (if, in fact, the user even notices it) for equipment from which the subscriber enjoys no direct or discernible benefit. To be sure, this might be countered with intensive customer education (potentially repeated each year), which in turn would rely upon additional staff training. The depth to which compliance would reach within an organization, and its resultant costs, must be examined against the ultimate goal of serving the

universal service needs of rural customers and providers who are endeavoring to ensure high quality universal broadband service.

If, however, customer consent is obtained; and, if the equipment is shipped or delivered successfully; and, if the customer connects the equipment properly, then the company's costs or involvement still do not dissipate. Rather, it should be expected that company personnel will need to explain usage; train the user; and schedule testing. The company must then invest in software or other products that enable the company to conduct the test, as well as staff hours to interpret and report the results. NTCA does not dispute the usefulness or necessity of these measures. Rather, NTCA highlights the components of these costs to illuminate the potential burden that would be imposed upon small providers, and to support NTCA's recommendations that the size of the testing pool must be proportionate to the size of the provider.

(c) The size of the testing pool must reflect the size of the provider

The Bureau has previously established a testing threshold of 50 locations per state. As noted above, these locations should be limited to locations at which there is an active subscriber. USTelecom proposes an alternative that set the number of testing locations at the lesser of 20 percent of HUBB locations or 50 subscribers.¹³ NTCA agrees, generally, but with some modification. In some instances, 50 subscribers may exceed a reasonable number of test subjects; this is particularly true for the small rural areas served by NTCA members, and it is likely to be true as well to the extent that smaller firms prevail in the CAF Phase II bidding process. However, NTCA submits that the testing threshold be limited to a per-company total of the lesser of 50 locations per state or 5 (five) percent of HUBB input locations (rather than the 20 percent

¹³ *Ex Parte of USTelecom*, at 2, 3.

proposed by USTelecom) with active subscribers (or, in the case of ETCs that do not report into HUBB, supported locations). In areas served by NTCA members, requiring a provider to test 50 locations would impose a proportionally larger burden than the 50-location obligation visits upon a provider with thousands or tens of thousands of subscribers across multiple eligible areas in a state. And, while USTelecom represents larger operators for whom such a structure might suffice, a minimum threshold of 20 percent as proposed by USTelecom would result in the same 50 test subjects for a provider with only 250 customers. Accordingly, the minimum threshold should be the lesser of 50 locations or five (5) percent. This enables a reasonable sample size that also recognizes the impact of testing costs on small providers. Finally, ETCs, rather than the Commission or another party, should be the entity to select the annual test set, since the ETC has access to most current subscriber information. This approach is both pragmatic and appropriate since subscriber information is not input into the HUBB. Moreover, ETCs that are not subject to mandatory buildout obligations because of prior deployment efforts (and therefore carry no obligation to report additional locations into the HUBB) would report the results of randomly selected locations in their existing customer base that have active subscribers.

2. Providers should be required to test only those network segments that are supported by universal service funds and under their control

NTCA proposes that only those portions of the network that are actually supported by universal service funds and under the control of the operator should be subject to testing. By way of example, USTelecom proposes that performance measurement obligations should test the connection rate at the operator's demarcation point at the customer premise. NTCA supports this proposal. NTCA submits that the measurement be based upon the “raw” connection rate to the operator’s demarcation point at the consumer premises, rather than based upon any measure of

bandwidth that may be affected by the configuration or capabilities of customer premises equipment (including but not limited to internal routers and other wi-fi devices). However, certain testing obligations to which price cap carriers are currently subject might not confirm a small provider's compliance with its obligations. Therefore, the Commission must ensure that network testing obligations for small providers focus on a narrower span of the network.

Specifically, price cap carriers that are subject to current performance measurement obligations are required to test from the customer premise to the nearest designated Internet core peering interconnection point (IXP).¹⁴ However, many rural providers rely upon middle mile facilities to connect to the backbone. These may be as extensive as carriers in Alaska whose traffic interconnects in Seattle, or more (comparatively, to be sure) modest distances of hundreds of miles that still outstrip the length of travel larger carriers may enjoy to the IXP. The Commission, as well, has recognized the role of severable parties in the provision of broadband. In the OBI Technical Paper No 1 and OBI Technical Paper No 4,¹⁵ the FCC discussed the needs for meeting standards to provide broadband to Americans. The Commission illustrated the various segments of a typical broadband network, including middle mile, second mile, and last mile.¹⁶ Broadband providers control and receive support for the segments that connect the

¹⁴ 2017 PN at para. 3.

¹⁵ *See*, "The Broadband Availability Gap: OBI Technical Paper No. 1," Federal Communications Commission, Washington (2010) (available at <https://transition.fcc.gov/national-broadband-plan/broadband-availability-gap-paper.pdf> (last viewed Nov. 28, 2017, 12:13)), *and* "Broadband Performance: OBI Technical Paper No. 4," Federal Communications Commission, Washington (2011) (available at https://apps.fcc.gov/edocs_public/attachmatch/DOC-300902A1.pdf) (last viewed Nov. 28, 2017, 12:10)).

¹⁶ *See*, OBI Technical Paper No. 1 at 59, Ex. 4-A, *and* OBI Technical Paper No. 4 at 14, Ex. 16.

consumer locally, but they do not today receive middle mile support and can control the middle mile only to the extent the middle mile provider provisions that which the ISP purchased. Wired, fixed wireless, and mobile wireless each rely upon analogous facilities. Each provider, assessing its characteristics and abilities, can purchase middle mile depending on usage and economics.

Accordingly, although the rural provider may have purchased sufficient capacity and deployed adequate facilities, its ability to demonstrate compliance with the testing obligations rests *at least* in part upon the performance of a "third party" middle mile provider. Moreover, it is unclear upon what basis or legal premise the Commission can compel and test for performance at certain levels with respect to network facilities that are not at all supported via universal service funds. Quite like the recognition that carriers cannot control performance past the demarcation point into the customer premise, testing obligations must recognize that small providers that rely on third party middle mile providers do not receive support to procure such services and cannot control the network performance that occurs beyond their network. Rather, any testing with respect to such network components is a necessary and appropriate topic for discussion only if and when the Commission undertakes a review of whether to establish a middle mile support mechanism.

C. TESTING HOURS MUST NOT MASK INADEQUATE PERFORMANCE.

The Commission proposed previously to require performance testing during peak usage periods; the Commission suggested that overall performance can be measured by evaluating performance during peak periods.¹⁷ As an alternative to the Commission's four-hour evening testing window, USTelecom proposes to expand the testing window to 6:00 a.m. – 12:00 a.m.,

¹⁷ 2017 PN at para. 9.

and to test once during each of four windows: 6:00 a.m. – 10:30 a.m.; 10:30 a.m. – 3:00 p.m.; 3:00 – 7:30 p.m.; and, 7:30 p.m. to 12:00 a.m. USTelecom explains that the 18-hour testing window enables analysis of typical daily usage cycles, as contrasted with the Commission’s current limited look at what is typically only a peak usage period. Additionally, to the extent that the testing itself can demand network capacity, spreading the testing across a broader part of the day would mitigate concern that may arise when more compressed testing is undertaken.¹⁸

In response to the USTelecom proposal, the Commission asks whether aggregating results from an 18-hour testing period would reflect mostly non-peak periods; whether satisfactory performance during non-peak periods might be misinterpreted to indicate satisfactory performance during peak periods; and whether “rush hour” conditions must be evaluated by measuring at rush hour.¹⁹ As a threshold matter, NTCA recommends an alternative to the USTelecom proposal. Specifically, NTCA recommends a broader testing window than suggested initially by the Commission, but which yet preserves the proposition that testing during peak hours most accurately discloses network capability. Toward this end, NTCA proposes that ETCs conduct speed and latency testing between the hours of 6:00 - 10:30 a.m., and then again between 7:30 p.m. - 12:00 a.m. This schedule best captures the true capability of the network being supported, including recognizing the imperative of determining busy hour offered load (BHOL) information in those specific windows.

¹⁸ *Id.*

¹⁹ 2017 PN at para. 9.

The Commission has noted that network congestion changes over the course of a day.²⁰ NTCA cautions that an 18-hour testing window (as recommended by USTelecom) could enable providers with less-capable networks to impute performance at "less active" periods to more constricted busy hours. NTCA's proposal of morning and evening test periods acknowledges the impact of business and residential usage, yet compartmentalizes those periods more effectively than a larger testing window that could obscure poor performance results. Nevertheless, NTCA recommends that to the extent the Commission permits network measurements over several windows of a day, providers must report their results on a per-window basis. A provider whose network cannot support busy hour traffic must not be able to allege compliance simply by papering over non-compliant performance with more attractive data from the least-busy hours of the day. Moreover, performance measurements must incorporate reasonable BHOL measures, so that oversubscription in the network is reasonably managed. This technology-neutral approach is key to ensuring that the fundamental promise of universal service -- reasonable comparability -- is not diluted if a provider's underlying infrastructure strains to meet requirements.²¹

²⁰ "Measuring Broadband America Fixed Broadband Report," Federal Communications Commission, Washington, at 25 (2016) (available at <https://www.fcc.gov/reports-research/reports/measuring-broadband-america/measuring-fixed-broadband-report-2016>) (last viewed Nov. 28, 2017, 12:37)).

²¹ For a general overview of how different technologies perform, "Wireless Broadband is Not a Substitute for Wireline Broadband," Vantage Point, Mitchell, SD (2015) (available at <http://www.ntca.org/images/stories/Documents/fixewirelesswhitepaper.pdf>); and, Thompson, Larry, VandeStadt, Warrant, "Evaluating 5G Wireless Technology as a Complement or Substitute for Wireline Broadband," Vantage Point, Mitchell, SD (2017) (available at https://www.ntca.org/images/stories/Documents/Press_Center/2017_Releases/02.13.17%20fcc%20ex%20parte-ntca%20letter%20submitting%202017%20technical%20paper%20wc%2010-90.pdf).

In similar vein, the Commission's inquiry as to whether there are seasonal peaks and valleys in usage, and whether testing should contemplate those variances which might also differ from state-to-state, evidences the Commission's recognition that some technologies may be affected by weather and seasons. These impacts may be rooted in demand loads for the service as may arise in recreational areas. Or, impacts may arise from physical interference with wireless signals that can be caused by summer foliage.²² The regular turn of seasons, too, affects some wireless services performance. In the case of satellite services, thermal noise from the sun causes signal interruption on a semi-annual basis when the sun crosses behind geostationary satellites. These seasonal outages can be as long as 15 minutes in a single day, and occur several days during each season.²³ (These interruptions can be particularly concerning if access to emergency services is compromised.) Toward these ends, the Commission must ensure that testing protocols hold all providers to the same consistent standard of service as measured by the customer experience.

In summary, NTCA submits that the Commission must not permit providers whose network capabilities fluctuate hourly or seasonally to allege compliance by relying on data culled from the least busy times of their network or during only self-selected times of the year. NTCA does not oppose a wider window that affords access to more contextual data, but at the core emphasizes that performance data must be tied to reflect reasonable BHOL assumptions and other essential network capabilities. Similarly, seasonal or variances must be accounted for, and

²² See, Analysis of Satellite-Based Telecommunications Broadband Services," Vantage Point, Mitchell, SD, at 11 (2013) (available at <http://www.ntca.org/images/stories/Documents/fixewirelesswhitepaper.pdf>).

²³ *Id.* at 13, 14.

noticed. The goals of universal service are not served if a provider can demonstrate that its service is robust and strong at 6:00 a.m. when few people are present and there are no leaves to interfere with a line-of-sight signal. Similarly, aggregated results would certainly represent most non-peak hours simply because there are more "non-peak" hours in a day than peak hours.²⁴ While there is questionable utility to evaluating network performance during unusual load conditions (*i.e.*, on the heels of a national disaster or emergency), it is similarly not useful to register a provider as meeting its obligations if its network performance is biased because it incorporates wide periods of little usage.

D. A TIERED COMPLIANCE RATING IS USEFUL BUT SHOULD NOT SERVE AS A TRIGGER TO AUTOMATICALLY REDUCE SUPPORT.

The Commission seeks comment on a USTelecom proposal to amend the current "pass/fail" threshold of 95 percent success to a tiered grading system that would recognize various levels of compliance. some level of compliance beneath 95 percent.²⁵ USTelecom proposes ETCs report and certify their results for each state by selecting one of five levels of compliance for both download and upload speed and latency, *i.e.*, Full Compliance, Tier 1 compliance, Tier 2 compliance, and so forth, based on various completion rates. NTCA supports this proposal, generally. This type of grading system would be useful in determining "how far along" providers are in their network deployment, and would provide a far more useful information set than a binary pass/fail analysis. However, NTCA suggests that the tiers recommended by USTelecom be adjusted:

²⁴ *See*, 2017 PN at para. 9.

²⁵ 2017 PN at para. 8.

	US Telecom	NTCA
Full Compliance	95-100%	95-100%
Tier 1	80-94%	90-94%
Tier 2	70-79%	80-89%
Tier 3	60-69%	70-79%
Tier 4	<59%	<69%

Importantly, as well, NTCA also notes that USTelecom includes in its tiered compliance proposal a reduction of high-cost support for non-compliant providers. NTCA cautions that the withholding of any support for a small carrier could inflict devastating impacts (*see*, n. 9, *supra*). Accordingly, compliance with a grade below Full Compliance should not trigger an automatic reduction or withholding of high-cost support. Firms that do not demonstrate full compliance should be permitted to demonstrate *why* full compliance was not obtained. Any manner of climate, labor, or other exogenous event could affect a provider's ability to deploy. Moreover, in the small service areas of rural providers with relatively few customers, sub-par performance at only a few locations could weigh results down disastrously.²⁶ Accordingly, rather than serve as a trigger for reduced support, the tiers should serve as an opportunity to assess the full needs of the

²⁶ Based on NTCA's recommendation to test the lesser of five (5) percent or 50 locations, sub-par performance of three (3) customers among a 200-subscriber company would jeopardize support under the USTelecom tier proposal. In larger test sets, the risk is magnified: a 70 percent compliance threshold for a Tier 3 grade permits 30 percent of the five (5) percent sample group to demonstrate sub-par results. Extrapolated across the entire customer base, this results in performance at 1.5 percent of customer locations (30 percent of 5 percent) to determine support for the entire company.

provider and, where necessary, stimulate a reassessment of whether the provider had access to adequate support in the first instance.

E. TRAFFIC LOADS CAUSED BY TESTING MUST BE CONTEMPLATED IN ASSESSING RESULTS; THIRD-PARTY ADMINISTRATION COULD REDUCE BURDENS.

The Commission seeks comment on USTelecom's notes that testing adds 9 (nine) Gbps of traffic during the current four-hour window. The Commission asks whether this load, caused by the testing, unintentionally skews the results, and whether staggered tests throughout the busy period reduce this risk.²⁷ Toward that end, NTCA submits that to the extent that testing imposes a load upon the network, that load must be measured and compensated for in the results.

Although staggered testing could serve to resolve this issue, the decision to stagger testing should be left to the ETC. To the extent consistent testing across providers is desired, providers should have the option of either staggering tests or conducting them simultaneously, and then demonstrating to the Commission the method of measurement and adjustment for network loads (along with notation and accommodation of reasonable, industry-standard overheads that might also affect results).

The Commission seeks comment on whether a single entity like USAC or a group of entities should establish servers that are dedicated to testing; if so, who should pay for this; and, possible benefits for small providers.²⁸ NTCA submits that a central hub for testing, whether through the provision of server capacity, CPE, or other resources, could alleviate some cost burdens from the industry. However, the Commission must ensure that this USAC-oriented

²⁷ 2017 PN at para. 9.

²⁸ 2017 PN at para. 12.

approach does not mire the program in bureaucracy. And, the process must contemplate timely responsiveness among the parties to each other, as well as flexibility to respond and accommodate situations that may be relative outliers on the spectrum of performance testing experience. NTCA also suggests that the provision of USAC server capacity could ease the burden on small providers, and recommends that this proposal should be extended to include USAC provision of end-user CPE for testing, where feasible. This approach would *de facto* ensure that the costs of hardware and software do not fall on the provider, and would be a first step toward mitigating burdens placed upon small ETC resources. In all instances, however, testing (as noted above) should focus on the network segments that are within the control of the provider; the obligations should cover the distance to the USAC server. However, the use of a USAC solution should not foreclose opportunities for statewide networks or other providers to provision and implement testing solutions in their states. A USAC solution should be a supplement and/or an alternative, rather than a one-size-fits-all solution. Local interests could be well-suited to assist member/owners with these requirements.

III. CONCLUSION.

WHEREFORE the reasons set forth herein and above, NTCA urges the Commission to ensure that any testing protocol as may be imposed is technology-neutral and captures sufficient data to discern the actual capabilities of the supported network. NTCA also emphasizes the need to prevent undue burdens on smaller ETCs that would be occasioned by performance testing measures. These principles balance the dual needs of acquiring an accurate understanding of

ETC compliance while not consuming unnecessarily resources that are better left to improving the availability and affordability of supported services in rural markets in furtherance of Universal Service goals.



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